



U.S. Department of Labor  
Occupational Safety and Health Administration  
(Non-Mandatory Form). Format meets ANSI Z400.1-1998, OSHA 1910.1200 and WHMIS requirements.

# Safety Data Sheet

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

## Section 1: Product and Company Identification

Product Name: 70S203533  
Product Type: Solid Wire for Gas Tungsten Arc Welding  
AWS Classification: AWS A5.18 ER70S-2  
Manufacturer: TECHNIWELD USA  
Physical Address: 6205 BOAT ROCK BLVD  
ATLANTA, GA 30336  
Mailing Address: P.O. Box 44226  
ATLANTA, GA 30336  
Business Phone: 404-699-9900  
Business Fax: 404-699-7800  
E-mail Address: info@TECHNIWELDUSA.COM  
Web Address: www.TECHNIWELDUSA.COM  
Emergency Phone: CHEMTREC (24-Hour) 1-800-424-9300  
Outside of the USA & Canada 1-703-527-3887  
Date of Preparation: July 7, 2014  
OSHA Regulatory Status: Non-Regulated  
WHMIS Classification: Not a Controlled Product

## Section 2: Hazard Data

The ingredients are components of this product and hardly harmful to users because of the processed a series of progresses.

This section covers the materials and the hazard.

### 2-1. Classification of hazard

Specific target organ toxicity, repeated exposure. Category 2

### 2-2. Warning signals including precaution.

- Pictograph



- A signal: warning
- Health hazard statements  
(H373) May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure  
(State route of exposure if it is conclusively proven that no other routes of exposure cause the hazard).

- Prevention precautionary statements
  - (P260) Do not breathe dust/fume/gas/mist/vapors/spray.
- Response precautionary statements
  - (P314) Get medical advice/attention if you feel unwell.
- Disposal precautionary statements
  - (P501) Dispose of contents and container in accordance with local and national regulations.

**2-3. other hazards**

No data available

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**Section 3: Composition and Information on Ingredients**

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Ingredient	CAS#	EC No.	Contents (wt %)
Iron	7439-89-6	231-096-4	Rem.
Manganese (Mn)	7439-96-5	231-105-1	0.5~3.0
Silicon(Si)	7440-21-3	231-130-8	0.2~1.5
Copper(Cu)	7440-50-8	231-159-6	0.05~0.5

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**Section 4: First Aid Measures**

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In case that expose an excess arc and fume, take a following first aid treatment.

- Move a patient in fresh air and untie a neck and a waist.
- Rest a patient warmly and if having a difficult breath, take a oxygen supplier or artificial respiration - Take a proper medical treatment in case of a burn and an electric shock.
- Call for a medical aid.

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**Section 5: Fire Fighting Measures**

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**5-1.** Danger or fire and explosion: Product has no ignition and inflammability, but arc, spatter, heating in welding can cause a fire and an explosion.

**5-2.** Fire extinguishing: In case that extinguish a fire without danger, isolate a product from fire position and behave with one's back to the wind

**5-3.** Injurious smoke: May generate injurious smoke.

**5-4.** Count Measure: Before welding remove dangerous materials and ventilate a place of work. Proper equipment (a fire extinguisher) is prepared in case of fire.

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**Section 6: Accidental Release Measures**

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**6-1.** Personal precautions, protective equipment and emergency procedure: Not applicable

**6-2.** Environmental precautions: Not applicable

**6-3.** Methods and material for containment and clean up: Not applicable

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## Section 7: Handling and Storage

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7-1. Treatment: Refer to precautionary label on the box – observe a handling law.

7-2. Storage method: Store with waterproof and low moisture.

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## Section 8: Exposure Controls / Personal Protection

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### 8-1. Data of exposure

INGREDIENT	CAS No.	EC No.	Occupation safety and health acts (mg/m <sup>3</sup> )	OSHA-PEL (mg/m <sup>3</sup> )	ACGIH-TLV (mg/m <sup>3</sup> )
Iron	7439-89-6	231-096-4	5.0	15.0	10.0
Manganese(as Mn)	7439-96-5	231-105-1	5.0	5.0	0.2
Silicon(as Si)	7440-21-3	231-130-8	10.0	15.0	10.0
Copper	7440-50-8	215-159-6	0.1	0.1	0.2

- ❖ ACGIH : American Conference of Governmental Industrial Hygienist
- ❖ TLV : Threshold Limit Value
- ❖ OSHA : Occupational Safety and Health Administration
- ❖ PEL : Permissible Exposure Limit

### 8-2. Personal protector in welding

- Protection glasses, protection mask: because of protecting eyes, face from arc ray and spatter, shield light number of filter-lens is over 12.
- Dustproof mask, poison-protection mask: ventilation equipment which have an enough capacity must be installed in work-place and if needed, wear a dustproof mask or poison-protection mask
- Protection gloves: leather good is useful in preventing an electric shock and a burn. Wear a cotton gloves in leather gloves.
- Apron: leather good is useful for protecting from the breast to the femoral region.
- Isolation shoe : prevent an electric shock and a burn, protect a foot from out-impact
- Ventilation : partial ventilation equipment is installed for a standard permission
- Emergency eye washing : employer provide eye washing equipment ,for in case that worker's eye is exposed from alien materials

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## Section 9: Physical and Chemical Properties

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Welding consumable applicable to this sheet as shipped is non-reactive, nonflammable, non-explosive and essentially nonhazardous until welded.

9-1. Physical State: Solid

- 9-2. Odor: Odorless
- 9-3. Odor threshold: Not applicable
- 9-4. pH Value: Not applicable
- 9-5. Melting point: Not applicable
- 9-6. Early boiling point: Not applicable
- 9-7. Flash point: Not applicable
- 9-8. Evaporation rate: Not applicable
- 9-9. Flammability: Not applicable
- 9-10. Explosion limit - lower: Not applicable  
Explosion limit - upper: Not applicable
- 9-11. Vapor pressure: Not applicable
- 9-12. Solubility in water: Not applicable
- 9-13. Vapor density: Not applicable
- 9-14. Density: 7~8.
- 9-15. Partition coefficient N-octanol / water: Not applicable
- 9-16. Spontaneous combustion temperature: Not applicable
- 9-17. Decomposition temperature: Not applicable
- 9-18. Viscosity: Not applicable
- 9-19. Molecular weight: Not applicable

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## **Section 10: Stability and Reactivity**

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Hazardous reaction materials – this product generate hazardous fume and gas in welding but welding fumes and gases cannot be classified simply because the composition and quantity of both are dependent upon the metal being welded, the process, procedure and electrodes used. Other conditions which also influence the composition and quantity of the fumes and gases which workers may be exposed includes; coatings on the metal being welded, the number of welders and the volume of the worker area, the quality of the atmosphere.

In general, welding fumes and gases are generated because of the ingredients such as manganese, magnesium oxide, silicon oxide, calcium oxide, titanium oxide, etc.

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## **Section 11: Health Hazard Data**

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Welding fumes consist of complex materials and represent iron oxide, manganese oxide and fluorine oxide.

The following section is the health hazard data.

### **11.1 Iron oxide**

- Acute poisonous character : relatively non-poison at intake
- A generation of cancer : no data
- Health influence: (exposed eye and skin) acute exposure – occur a physical stimulation.
  
- Chronic exposure – no data.
- (Ingestion) acute exposure - occur a physical stimulation.

Chronic exposure – Occur an iron-pneumoconiosis in case that a welding fume is piled in the lungs.

### **11.2 Manganese oxide (manganese)**

- Acute poisonous character: it is rare for worker to occur an acute poison.
- A generation of cancer : nothing
- Health influence: (Ingestion) acute exposure – May occur an acute pneumonia in case that a welding fume of manganese steel is breathed in.

Chronic exposure - Occur a nervous disease by reason of chronic poison when welded in a limited place.

- Metal fume fever - metal fume fever which have a symptoms like a cold is occurred when a worker ingest a corpuscle of metal oxide, below 1.5 micro(generally 0.02~0.05 micro)
- Initial symptoms appear after 4-12 hours leading to thirst, sweat, metal like smell and unpleasant mouth odor.
- Other symptoms are dry throat, cough, and discomfort
- Ingestion will lead to fever, cold feet, muscular pain and headache.
- This can also lead to vomiting, excess mental activity and have loose bowel movements.

Every symptom is lessened in less than 24~36h. Chronic exposure – chronic metal fume fever don't occur but symptoms occur repeatedly and disappear within one-two days.

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## **Section 12: Data of Environment Influence**

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**12-1.** Toxicity: No data available

**12-2.** Persistence–degradability: No data available

**12-3.** Bio accumulative potential: No data available

**12-4.** Mobility in soil: No data available

**12-5.** Results of PBT and vPvB assessment: No data available

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## **Section 13: Cautions Of Wastes**

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Follow the rules of the government and the local government when dump wastes.

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## **Section 14: Data for a Transport**

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**14.1** Grade classification: No data available

**14.2** Cautions of a transfer – Don't give a impact to products not to break. Observe the safety driving law.

**14.3** Prepare a waterproof and a damp proof of products.

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## **Section 15: Expression of Laws and Regulations**

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Observing the article 39 (express of hazardous materials) of law of industry safety & health and the article 31 of this same law, express the precautionary label on the product.

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## **Section 16: Other Information**

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**16-1.** This MSDS is made by TECHNIWELD USA and please refer to the MSDS of each material and data of welding fume & gas from the Korea Occupational Safety & Health Agency.

**16-2.** Read and understand the manufacturer's instruction and the precautionary label on the product, and follow the laws.

**16-3.** Reference data: FUMES and GASES in the welding environment (AWS)

Welding: FUME and GASES  
(Australian Government Publishing Service Canberra)  
MSDS (KISCO-NET) of each material.

Data cooperation: Korea Institute of Industrial Technology